

**AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims:

Claims 1 – 29. (Canceled)

Claim 30. (Not entered)

Claim 31. (Currently amended) A system for monitoring surface changes in a skin wound over time, the system comprising:

a wound dressing including a two-dimensional array of test electrodes for application to the surface of the wound,

a circuit electrically coupled to the two-dimensional array of test electrodes, the circuit for measuring an electrical characteristic of tissue immediately underlying each test electrode, said circuit comprising:

a switching device for selecting successive test electrodes, and

an analyser for passing an electrical alternating current between each selected test electrode and at least one further electrode applied to the skin at a location away from the wound,

said analyser further calculating the electrical characteristic of the tissue immediately under each currently selected test electrode as a function of the voltage difference between the currently selected test electrode and at least one reference electrode, adjacent to the currently selected test electrode, the voltage difference being measured while passing the electrical alternating current between each currently selected test electrode and the at least one further electrode; and

a display device electrically coupled to the analyser, the display device for presenting a visual map generated using analyser circuitry of said analyser, the map indicating the size and shape of the wound based upon the measured electrical characteristic.

Claims 32 – 33. (Canceled)

Claim 34. (Previously presented) A system as claimed in claim 31, wherein the array of test electrodes is arranged on a flexible backing of insulating material.

Claim 35. (Previously presented) A system as claimed in claim 34, wherein the array of electrodes is a rectangular array.

Claim 36. (Previously presented) A system as claimed in claim 34, wherein each test electrode is covered with a conductive gel, the resistance between adjacent test electrodes being high relative to the resistance via the gel between each test electrode and the underlying tissue.

Claim 37. (Previously presented) A system as claimed in claim 36, wherein the gel is a hydrogel.

Claim 38. (Previously presented) A system as claimed in claim 34, wherein leads for the test electrodes are also disposed on the flexible backing of insulating material and covered with an insulating material.

Claim 39. (Previously presented) A system as claimed in claim 31, wherein the two-dimensional array comprises at least 25 test electrodes.

Claim 40. (Currently amended) A system as claimed in claim 31, wherein the electrical characteristic is an impedance of the tissue immediately underlying each test electrode.

Claims 41 – 45. (Canceled)

Claim 46. (Previously presented) A system as claimed in claim 41, wherein the further electrode is also disposed on the flexible backing of insulating material.

Claim 47. (Previously presented) A system as claimed in claim 41, wherein for each test electrode a measurement is made at a plurality of different frequencies.

Claim 48. (Previously presented) A system as claimed in claim 41, wherein each measurement is made at a frequency of from 1 milliHz to 100 kHz.

Claim 49. (Canceled)

Claim 50. (Currently amended) A method of monitoring surface changes in a skin wound over time, the method comprising:

applying a dressing to the wound, the dressing including a two-dimensional array of test electrodes applied to the surface of the wound;

measuring an electrical characteristic of tissue immediately underlying each test electrode by selecting successive test electrodes, passing an electrical alternating current between each selected test electrode and a further electrode applied to the skin at a location away from the wound, and calculating the electrical characteristic of the tissue immediately under each currently selected test electrode as a function of the voltage difference between the currently selected test electrode and at least one reference electrode adjacent to the currently selected test electrode, the voltage difference being measured while passing the electrical alternating current between each currently selected test electrode and the at least one further electrode; and

presenting a visual map indicating the size and shape of the wound based upon the measured electrical characteristic.

Claims 51 – 52. (Canceled)

Claim 53. (Previously presented) A method as claimed in claim 50, wherein the array of test electrodes is arranged on a flexible backing of insulating material.

Claim 54. (Previously presented) A method as claimed in claim 53, wherein each test electrode is covered with a conductive gel, the resistance between adjacent test electrodes being high relative to the resistance via the gel between each test electrode and the underlying tissue.

Claim 55. (Previously presented) A method as claimed in claim 50, wherein the two-dimensional array comprises at least 25 test electrodes.

Claim 56. (Currently amended) A method as claimed in claim 50, wherein the electrical characteristic is the impedance of the tissue immediately underlying each test electrode.

Claims 57 – 58. (Canceled)

Claim 59. (Previously presented) A method as claimed in claim 57, wherein for each test electrode a measurement is made at a plurality of different frequencies.

Claims 60 – 61. (Canceled)

Claim 62. (Previously presented) A system as claimed in claim 31, wherein said switching device for selecting successive test electrodes also selects, for the currently selected test electrode, at least one test electrode, adjacent to the currently selected test electrode to act temporarily as said reference electrode with respect to the currently selected test electrode.

Claim 63. (Previously presented) A system as claimed in claim 34, wherein said at least one reference electrode is a dedicated electrode on the flexible backing of insulating material.

Claim 64. (Previously presented) A method as claimed in claim 50, comprising, for each currently selected test electrode, selecting at least one test electrode adjacent to said currently selected test electrode to act temporarily as said reference electrode with respect to the currently selected test electrode.

Claim 65. (Previously presented) A system as claimed in claim 53, wherein said at least one reference electrode is a dedicated electrode on the flexible backing of insulating material.